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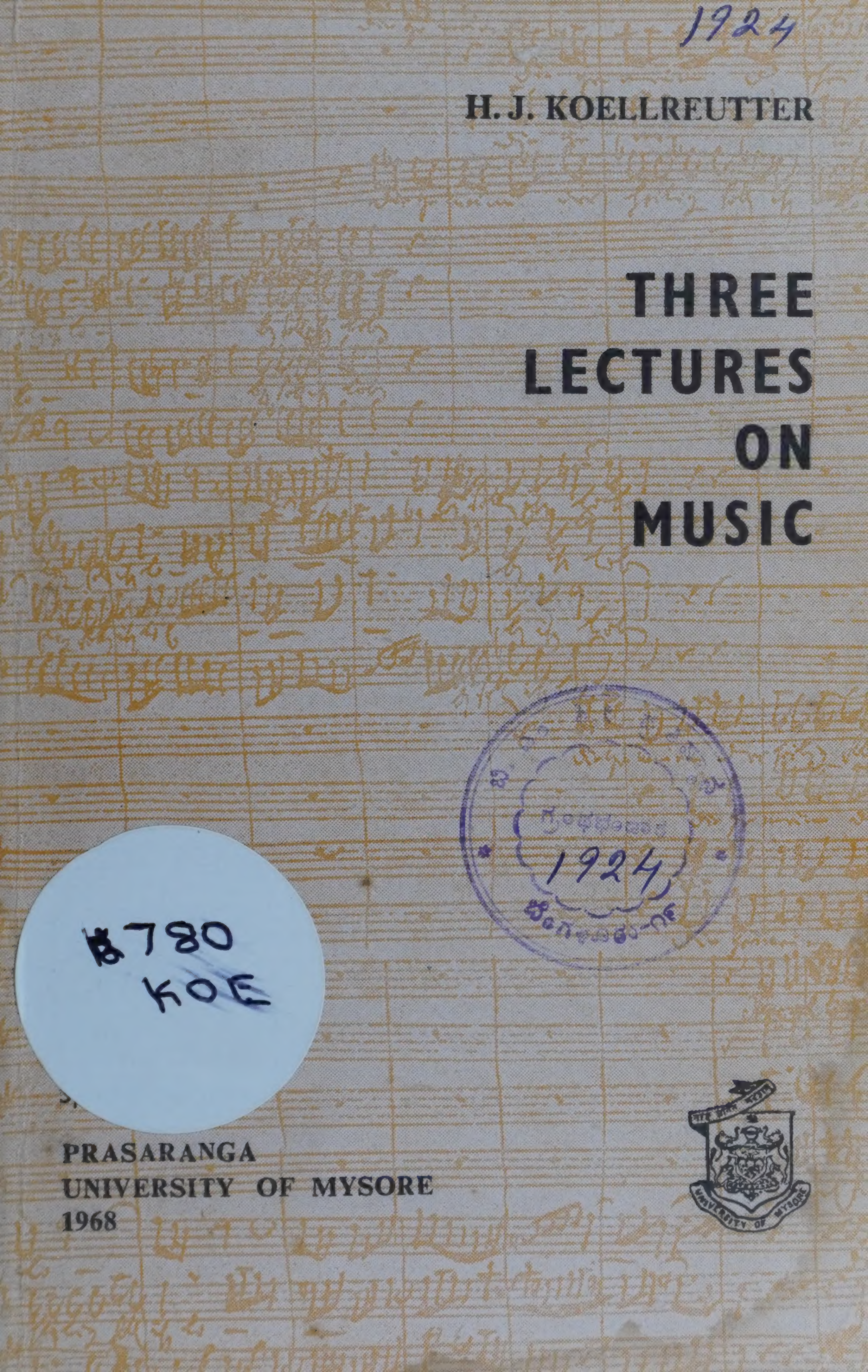

H. J. KOELLREUTTER

THREE LECTURES ON MUSIC

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PRASARANGA
UNIVERSITY OF MYSORE
1968

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Mysore-6
20th August 1968

Prabhu Shankara

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LECTURE I

WESTERN MUSIC:
FROM THE MIDDLE AGES TO THE PRESENT DAYS

The history of music is the history of musical styles. Like the history of all art, it consists of a series of manifestations which contain some permanent characteristics, the so-called historical constants, and some elements of continuous change in composition method, so that early music often seems astonishingly actual, and on the other hand often incomprehensibly strange and alien.

In a classification of individual musicological facts there are at times close causal bonds and groupings due to inner relationships, and at other times sudden breaks caused by the appearance of new and different manifestations: connections become apparent, and individual cases which do not fit the pattern can be classified together with related groups.

Style is the sum total of connecting and distinguishing characteristics which link a work of art to a particular group, or distinguish one from the other.

Thus terms such as national style, period style, personal style, and others, arise.

From a historical point of view the most interesting of these is the *period style*, although it should be noted that these styles did not simply follow on one after the other through the centuries, but that they crossed and overlapped: while the Gothic style, for example, was on the decline, the Renaissance style reached its climax and the Baroque style was just emerging. Styles can also appear earlier in one particular country or decline at a later date than in others.

Every musical style defines a historical situation. It is the expression of an attitude of consciousness, and reflects the thinking and feeling of an epoch or of a people, a class or an individual. Style is the expression of man.

The great number of musical styles which have evolved in the post-Christian era can be divided into two major epoches which are complete within themselves, and a third, which is today only in its beginnings: the first epoch lasted until the Renaissance, and the second, which is almost finished, overlaps into the present age.

Various styles are given the special stamp that characterises and defines them by the position held by music in the social life of its age, its social function—that is, its relationship to man.

During the first epoch—which is called the Middle Ages, and which includes the musical styles of the Romanesque and Gothic periods, and extends into the Renaissance—all art, including music, was concerned with the relationship between man and God, was a religious act, communication with God.

God was the grand and unique theme of the Middle Ages. And music, like all art, was the expression of a reciprocal corresponding relationship between God and man, a world of symbols, in which both factors complemented each other, and, as psychical experience, formed a unity.

In the Middle Ages man did not yet belong to himself, but lived in consort with nature to an extent which Western man can now scarcely imagine, in an accord of soul and nature, God and man, which complementally combined to form a whole.

This, as it were, theocentric world, was the world of illuminated manuscripts, of gold backgrounds, and Medieval painting, as well as the world of the *Romanesque* style in music. . . .

Romanesque music is extremely simple, elementary in both senses of the word, but massive music, which is devoid of decoration; its broad, melodic phrases are reminiscent of the monumental Romanesque cathedrals for which they were written. Romanesque music is monodimensional music,whose notes or sounds are horizontally and successively, that is melodically conceived and combined.

Sociologically speaking, the accent of this music is not on the personal, but on the impersonal. Neither does the composer's name appear. Romanesque music is anonymous music, which does not emphasize the "I". but the "we", the, so to speak, qualitative form of collective existence, the community. Expression is given to this fact in the choral music.

The absence of a consciousness of the ego presupposes the absence of a consciousness of space, since, in order to objectivise and qualify space, an ego conscious of itself and capable of correlating itself to space is necessary. Medieval man was neutral and indifferent towards space. Spatial considerations were disregarded by his consciousness, and his music thus sounded level and flat. For this reason the first chants of the Romanesque style in music—and of Western music in general—the so-called Gregorian chant, is also called "plainchant" or "plainsong", that is flat chant: The extreme simplicity of these chants, their almost complete lack of ornamentation, and their massive character remind one, as I have already mentioned, of the style of Romanesque cathedrals. The space inside these cathedrals is not yet depth space, or, rather, interior space in our meaning of the word, but vaulted and cosmic space, undifferentiated space, a state of being embedded in the world.

But gradually, through the slow spread of Christianity, the state of unity of soul and nature, of God and man, was more and more disarranged, and the Gothic cathedral was born. Its delight in ornament, its rising, dynamic lines, and its transparent, light structure seem to symbolize the awakening of Western man to a new phase of consciousness, to a new epoch in his cultural history.

Gothic music too, seems to have dissolved the heavy, majestic, massive sound of the Romanesque period, into a filigree of flowing, directional, melodic lines. What had previously seemed passive and immobile, now became active movement.

During the second epoch—which includes the musical styles of the Renaissance, of Baroque, of Rococo or Classicism, and Romanticism, as well as their final stages, Impressionism and Expressionism-art was an attempt to establish a relationship not between man and God and the divine, but between man and man, and at the same time with the to him reality of the outer world.

This epoch, in contrast to the previous one, which was theocentric, we might call anthropocentric, or humanistic, The first stylistic period of this epoch was the to-called *Renaissance*.

The unity of God and man was shaken for the first time. The emancipation of man became the grand theme of the epoch, and Occidental thought developed more and more along rationalistic, and later materialistic, lines.

While, in contrast to the bodily feeling of the pre-Classical age—which was to a large extent hieratically bound, canonical, and almost stereotyped in its impersonal character—Greek bodily feeling had already displayed a certain degree of individualization of man, now, towards the end of the Middle Ages—that is to say in about the middle of the 13th century—man slowly began to become aware not only of his body, but also of his body as the bearer of his ego. He was no longer just a man, but one *definite man.* He was no longer the simply idealized bust or the ideal type of a Caesar, philosopher, or poet, but a portrait of the kind created by Jan van Eyck, the expression of man, who laughs and cries, suffers and loves.

In the same way music, too, became a means of communicating man's feeling. At first it was the troubadours and minnesingers: since 1250, they had been disclosing the soul of man in their lyrical ego-poems, and questioning the unity of man and nature. Then came the Italian madrigal of the Renaissance period, which took as its subject man and his inner and outer experiences, and gave a musical commentary on him. The objective, factual, neutral, almost abstract fifths and fourths of Romanesque and Gothic music were a thing of the past. They were replaced by the subjective, personal, individually coloured sensuous thirds of a music which endeavoured to portray man and his soul.

The understanding of man as subject presupposes the understanding of the world and the environment as object. Thus in their works the van Eyck brothers were able to develop more and more clearly and impressively the painting technique of perspective, that is to say the plastic three dimensional realization of space.

Slowly space was brought to the surface of the consciousness, and became the most important pre-occupation of the age :

Copernicus exploded the theory of the limisted geocentric heaven, and discovered heliocentric space.

Columbus exploded the bounds of the enclosing and encircling Oceans and discovered terrestrial space.

Vesale, the first great anatomist exploded the old anatomical theories of Galen, and discovered bodily space.

Harvey exploded the established Hippocratic medical theory of the humours, and discovered the circulation of blood.

Kepler exploded the circular and two-dimensional universe of the Classical world by proving that the planets move in ellipses and not in circles.

Galilei consolidated penetration into space by the discovery of the telescope.

The urgency of the need, at about the turn of the 15th and 16th centuries, to break through the plane and to win space, is not only expressed in the systematization of perspective by Leonardo da Vinci, but also by the swing in painting from the sacral wall to the panel, that is to say from fresco painting to oil painting.

In all spheres one can sense a kind of overemphasis on space and spatial phenomena. This manifests itself in the division of space, and in its elaboration in a way which appeals to the senses, that is in a kind of extravagant ornamentation, in the *Baroque style*. At that time, too, the first lace was made: even material was no longer allowed to remain two-dimensional. It had to be pierced so that the background and what was being under it, could be seen.

Like Baroque architecture, Baroque music, too, had a tendency towards extravagant ornamentation and towards pompous, ornate melodic treatment. The word "Baroque" comes from the French adjective "baroque" which means extraordinary, special, strange.

In music, as a kind of reflection of the intense interest taken in space in that age, the so-called tonality, emerged: a compositorial system of relationship similar to perspective, and added a third to the other two musical dimensions, melody and harmony: Tonality. And as a tendency towards materialistic thought is inherent in a one-sided emphasis on space, it is understandable that music in this epoch developed further and further away from the vocal towards the instrumental, that is towards the material.

A world of man arose, an anthropocentric world, as I have already mentioned. In it "man is the measure of all things". From the security of the unity, man-nature, God-man, man emerged into three-dimensional space. And with Galilei's words "measure everything that is measurable, and make everything measurable that is not yet so" began the rational conquest of the world.

To the new way of thinking the world consisted of things in space and time, the things consisted of matter, and the matter could call forth forces and be influenced by forces. Processes resulted from a reciprocal action between matter and force. Every process was the result of and the cause of other processes.

Space, time, matter and causality were the focal points of Western thought, fundamental terms of rationalism and classical physics.

Reality consisted only of suchthings as could be registered by or observed with the senses.

At the same time the human attitude towards nature had changed from a contemplative to a pragmatic one. Everything was bound up with the question of what practical use could be made of it. The same thing happened in art, too. Music became a game, for entertainment, for killing time, a means of distraction to such as could afford it. Its function was no longer the communication of the divine, but the communication of pleasure.

The classical music of a Haydn, Mozart, or Beethoven is the expression of this age, the 18th century. Light, charmingly sinuous melodies, and refined and delicate themes are characteristic of them : it is the music of what in German is called "gallant style", which because of its convolutions, bears the name *Rococo*, deriving from the French word "rocaille", meaning mussel, also block of stone, carved stone.

The music of this period is not merely the playful to and fro of the sensitive, "gallant style", but also the expression of contrasting feelings, whose conflicts demand to be resolved in the so-called "Development" of two main themes or main thoughts in the Sonata or

Symphony. In order to emphasize the characteristics of feeling and emotion, as well as such as underline the personal, the individual, the music of the Classical period created the systems of so-called dynamic expression, that is the marks of expression prescribed by the composer, such as crescendo, diminuendo, mf., sfz., and others, which gave music a progressively more dramatic character.

The over-emphasis of space and spatial phenomena, which increases through the centuries after 1500, the overloading of the "objective" exterior, and its rationalization, were necessarily accompanied by an over-emphasis of the ego in opposition to the outer world: individualism. On the other hand the force of evidence in favour of abstract rational thought as opposed to intuition increased decisively, a development which has its climax in naturalism and in materialism entered a decadent—or, as I would rather call it—deficient phase.

The musical expression of this phase of development in the second epoch of the history of Western culture was the so-called *Romantic music*, which brought with it an over-emphasis of man and the human aspect, as well as of the outer world which appears real to man. The rationally established forms of the Classical period were sacrificed to the expression of individual experience. All kinds of works intended to create a specific mood were created : free, as it were improvised forms, like fantasies, rhapsodies, the Romantic song and the symphonic poem. Poetry no longer served music as was still the case with Mozart, but music served poetry.

Romantic means "like a romance", unreal, adventurous. The romantic artist does not seek the brightness of day, the tangible and understandable, but night, loneliness, the non- and super-terrestrial, the visionary and the miraculous. He is not attracted by gaiety and contentment, but the unhappiness and melancholia. He is the man of "aimless longing."

Schumann, Chopin, Liszt, and Wagner created new means of expression. Tone colour took on a hitherto unknown importance. The use of instruments in registers which seemed to contradict their normal ones (very deep notes on the flute and the highest registers of bass instruments, for instance) serve to describe the strange, the uncanny, the demonic. Dissonance, until then a means of keeping the parts progressing logically and flowingly, now became a means of creating atmosphere, of expressing spiritual anguish. Whereas the Classical period built up a kind of beauty cult with lovely sounds, Romanticism makes use of the fascination of characteristic dissonances.

At the end of this development, an overstressing of space and spatial phenomena, as well as excessive individualism, led to two stylistic tendencies, which have gone down in the history of art as *Impressionism* and *Expressionism.*

Classical art was the art of moderation. Romantic art, however, was an art of immoderation. Classical art meant concentration, Romantic art expansion. Thus Impressionism and Expressionism were extensions of Romantic art.

Individual, extra-musical impressions were translated into music, and personal expression was driven to extremes. Traditional aesthetic principles, classical form and shape, were sacrificed to the new desire for expression. Whereas Impressionism abstracted the pure colour, the pure sound, Expressionism did the same for the pure contour, the pure melody. The chords, the harmony, which at first called forth the most passionate opposition, resulted only *secondarily* from the combination of lines which were formed solely with a view to achieving the highest degree of melodic expression. Just as the Impressionists broke through to a new elemental harmony, the Expressionists broke through to a new kind of elemental melody.

The second epoch of the history of Western Culture had entered into a deficient stage of its development. I say deficient, because the characteristics which constituted it, and which represented, as it were, its "positive" basis, retreated into the background, and new elements began to play a part, elements which, looked at from the point of view of tradition, had a "negative" aspect—as, for example, deformation, relinquishment of the design, of the melodic line, of the classical cadence and harmonic functions, of rhythmic symmetry and quadrature. (It is self-evident that these "negative" components were to become "positive" conditions for a new emergent development.)

The Impressionist Claude Debussy received his decisive intellectual stimulus from French Impressionist painting; the most important Expressionist among the musicians, Arnold

Schoenberg, received his from the Expressionism of the painters Klimts and Kokoschka. Schoenberg had himself experimented with painting along these lines, and from then on pursued this style of completely abstract, pure expression.

This phase of the history of Western culture ever has not yet come to an end. Over-production, inflation, mechanization, automation and atomization are evidence of a continuous process leading from rationalism to materialism, and beyond, to the mechanization of art.

Electronic music and *"musique concrete"* (concrete music), are representative of this tendency. They reject abstract notes, chords, or tonal constructions, and replace them with the rumbling of a train, car, or plane, by birds' voices, deformed human voices, or other natural sounds, or arrange electronic and synthetically produced sounds into a kind of sound montage, to form a type of music which seems to proclaim the triumph of matter over spirit.

Thus the general tendency of human thought led beyond the 19th century towards an ever-increasing trust in science and in precise, rational terms, and to scepticism with regard to such terms as did not fit the normal framework of scientific thought, as, for example, religion, soul and spirit.

Modern science did increase this scepticism in many instances, but, at the same time, itself rebelled against the overrating of scientific terms, and, in addition, against progress as the aim of the rationalisation and mechanisation of our life. Since Einstein and Planck it has been forced to learn that the existing scientific terms in each case only apply to a very limited part of reality, and that the other part, which has not yet been understood, and never will be fully understood, remains infinite.

In this way, in the first half of our century, modern science has opened the gate to a new and more extensive view of the relationship between the human spirit and reality.

I therefore venture to say that in this third epoch of the history of Western culture, which today is in its beginnings, every form of art must learn to do justice to this new relationship between the human spirit and reality by integrating the two previous worlds—the pre-humanist and the humanist—in a third world.

Philosophical materialism would be overcome in this way, and a form of art would develop which would not exclude man but would penetrate regions beyond him, in which, in a super-rational way—that is to say in an integration of rational and irrational—a real or an apparent truth, or even a synthesis of both would form the basis of life.

This development would naturally lead to a spiritualisation of art. And it seems to me as if the first symptoms of this development can already be observed in the work of our living composers, such as Boulez, Luigi Nono, Karlheinz Stockhausen,—in particular, in the works of the now elderly Strawinsky.

The world of this music is the micro-physical world which has been revealed by modern science. In it the structural change is reflected not only theoretically, but audibly—a structural change which has already begun to establish itself in music through the new philosophy. Everything that once was dense, heavy, weighty, stable and sufficient unto itself, has become suspended, inwardly active, and has thus lost its former immobility and its fixed location within space and system.

The lack of a basis key, or fixed point and apparent absence of system and the absence of of thematic repetition, as well as the lack of melody, make this music seem restless and intangible.

* * *

Every art has its roots in the irrational. For this reason every interpretation of a work of art remains a hazardous venture. Everything that expresses itself in notes, in buildings, or in design or colour, can never exhaustively be explained in words. That which is speechless, without words, genuine and direct expression, can never be translated into words.

The changes in the philosophy in the Western world are nowhere more easily recognisable than in the styles of art. Only insight into the changes in the conception of the world in our consciousness will reveal to us the nature and meaning of art, and its forms of expression.

Music as communication,

as the reflection of an attitude of consciousness,
as the expression of scientific knowledge,
as the mirror-image of a social order,
as the representation of an historical situation.

SYNOPSIS

First Period

Characteristics :

Musical idiom — modal (absence of leading tone)
Structure — one and two-dimensional
Thinking — irrational, intuitive
Tendency — spiritual
Communication — Man-God

Styles :

Romanesque (approx. 1000 A.D.), Gothic (approx. 1300)

Second Period

Characteristics : (innovating)

Musical idiom — tonal (psesence of leading tone)
Structure — three-dimensional
Thinking — rational
Tendency — materialistic
Communication — Man-Man
— Man/Space

Styles :

Renaissance (approx. 1500), Baroque (aprox. 1700), Rococo or Classification approx. 1800), Romanticism (approx. 1850), Impressionism (approx. 1900).

Third Period

Characteristics : (innovating)

Musical idiom — atonal (absence of leading tone)
Structure — four-dimensional
Thinking — supra-rational
Tendency — mental (spiritual)
Communication — Man/Humanity
— Man/Time

Styles :

- Restaurative tendencies :
  - New-classicism, Folklorism (approx. 1920 etc.)
- Innovating tendencies :
  - Expressionism (approx. 1920), Concretism, including concrete and electronic music (approx. 1950).

LECTURE II

INDIAN AND WESTERN MUSIC AS THE EXPRESSION OF DIFFERENT ATTITUDES OF CONSCIOUSNESS

Music—like all cultural manifestations—is the expression and mirror image of certain attitudes of consciousness.

By cultural manifestations I mean art and science, the spoken and the written word, as well as even fashion and cookery, for instance. All these cultural activities reflect the attitudes of human consciousness by their style, expression and theme.

Music—like all art—is a seismographical manifestation of human thinking and feeling.

Thus the Western music of the Middle Ages, the Renaissance, the Baroque, the Classical and Romantic epochs, or the music of our days is the result of varied, often contrasting attitudes of consciousness.

And thus the music of different peoples corresponds to different attitudes and types of consciousness, and the music of the East is the result of one definite attitude of consciousness and the music of the West of another.

In this way, that is, as a reflection of a certain attitude of consciousness, styles arise, and styles are the sum total of those characteristics which give the work of art its identity.

So music reflects the degree and character of the consciousness peculiar to its creator or to the cultural sphere from which it springs. It reflects the thinking and feeling of the people in the historical epoch in which it is written.

By consciousness I mean the ability to grasp the relationships that constitute us, to arrange them in a mutual relationship to one another and to us, and to recognize their 'intentionality' that is to say, the connection between the being object and the experiencing ego, and its function.

Consciousness does not exhaust itself in formal knowledge. It is neither identical with the thought process, nor is it limited to mere recognition.

Consciousness is a process of constant association, a creative act of integration.

The way in which we see the world depends on the type of our consciousness, which is capable of limiting this world both in extent and time.

Of the great number of known musical traditions, two great musical cultures, complete in themselves, stand out. They are similar and at the same time fundamentally different from one another, and belong to fundamentally different attitudes of consciousness :

Classical Indian, and Classical Western Music.

> By classical Western music I mean here the so called Classical–Romantic tradition of Western music, of the 18th and 19th centuries, in other words, the music of Haydn, Mozart, Beethoven, Schumann or Wagner.

I should like to call the attitude of consciousness on which classical Indian music is based "intuitive-peripheral", that is to say one understanding by intuition and peripheral thinking. The attitude of consciousness on which classical Western music is based, on the other hand, I should like to call "rationalistic–discursive", that is to say one understanding by rational analysis.

> It is interesting to note that India has developed her whole culture out of an intuitive attitude of consciousness, whereas Europe reached the decisive climax in its culture during the rationalistic phase of its history.

Apart from the fundamentally different structure of Indian music—in which the octave can be split up into as many as 22 intervals (in Western music the octave contains only twelve), and thus has, as it were, a micro-tonal character it seems to me that one of the most important distinguishing characteristics of classical Indian and classical Western music is the absence in one and the presence in the other of the so called harmonic leading note, that is, of that musical phenomenon on which is based the principle of composition which gives classical Western music a kind of third dimension, its characteristic tonality.

Speaking about the harmonic leading tone, I don't refer only to the seventh step of a scale which leads to the eigth step, that is, to the octave of the keynote, but to any sound which, on account of its position in the musical structure and in the prevailing key, forcibly moves a semitone upwards or downwards, creating in this way a basic relationship, — a third dimension, — as I said — the so-called tonality.

By dimension I mean the successive, simultaneous or concentrical combination of sounds.

The first dimension usually called "melody" or "melodics," consists in the successive combination of sounds.

The second dimension, usually called "chord" or "harmony" consists in the simultaneous combination of sounds.

The third dimension consists in the concentric combination of sounds and is usually called "tonality."

Classical Indian music is mainly based on the principle of succession and exceptionally of simultaneity. Thus classical Indian music generally is mono-dimensional and exceptionally two-dimensional.

Classical Western music, however, is concentrically composed and becomes three-dimensional by the action of the harmonic leading tone.

So the absence or presence of the harmonic leading tone is one of the most important distinguishing characteristics of classical Indian and classical Western music.

The harmonic leading tone and the consequent principle of tonality are a musico-psychological phenomenon, which belongs in the sphere of musical perception or more exactly : of gestalt-perception, and which arises as a reflection of a rational consciousness of space and time, creating a kind of "spatial" sound and feigning the impression of musical perspective. At the same time it splits the melody up into temporal sections the so called bars or measures, and produces, by a rationally established hierarchy of chords, a kind of musical logic, an interdependence of spatial and temporal elements, which enables the listener to sense and anticipate what is to follow, and when the phrase begins and ends.

A musical culture, whose sound structure dispenses with tonal leading tone relationships, is the expression of an attitude of consciousness, for which space and time are not factors rationally calculated, but emotionally and spiritually experienced phenomena. This kind of attitude of consciousness—I called it "intuitive-peripheral"— is that which bears India's classical music.

The impressive cave-temples all over India and the monumental Hindu temples with their, as it were, naturally grown forms, are evidence of the absence of a rational consciousness of space, for to the builders of these temples, space is not depth space, interior space in the Western sense, but cavernous and vaulted space, cosmical, undifferentiated space, a state of being embedded in the world, and is reminiscent of the tremendous cosmological conception according to which the universe itself is nothing but a tremendous cavern.

Indian music is not architectured in the rationalistic sense of the word but spontaneously evolved and unfolded. Characteristic of Indian music is the fact that the form of the composition is not "composed" in the Western sense, not rationally "constructed", but intuitively "improvised." In other words, it grows and develops naturally, so to speak, and represents an incessant creative process.

The absence of a rational consciousness of space implies the absence of a rational consciousness of time, for time and space condition each other.

Thus the temporal aspect of Indian music dispenses with rational time division and rhythmic quadrature — characteristics of Western music — and frequently avoids symmetry and symmetrical periodisation.

Time in Indian music is "experienced" time. Not rationally "measured" time. Rationally "measured" time is the time peculiar to Western music, whose time elements—duration of a note, metrum (that is the unit used to measure time), and rhythm — are subject to rational control by the clock or the metronome, and whose tonal aspect, — that is what the listener perceives, — is characterised by the dividing bars.

In Western music time is dividing movement, directional sequence, numerical, quantifying order.

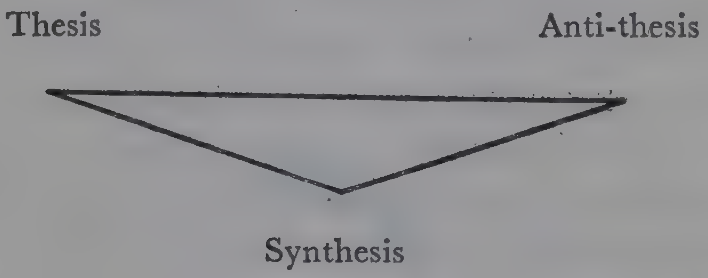
In contrast to this, time in Indian music is lasting, non-directional movement refering in the whole, is qualifying order.

In Indian music, time is psychical, emotional time, a reflection of the human soul, natural, experienced time. Its metric unit is the natural heartbeat of man. The "natural" movement of Indian music knows no phases of time like past, present and future. It only knows complementary coming and going, without beginning or end. Whereas listening to Western music requires a conscious association of past and future musical events within the piece, listening to Indian music consists in the perception of always new, often unexpected sound phenomena, which circle round a central idea, whose reality is expressed by the Raga and whose sphere of validity is the present.

Whereas classical Indian music is a spiritual experience, meditation, an "exercise" in the sense of the Latin term "exercitium ad integrum", classical Western music is representation, the representation of man, the representation of his feelings and the expression of his sentiments.

For the rational consciousness of space and time implies the consciousness of man as personality as individual, because the perception of the world and the environment as an object presupposes the perception of man as subject. For the objectivization of space and time requires an ego which is conscious of itself and can relate itself to space and time.

The consciousness of man and world as two non-identical, different factors results in a specific thought process, which presupposes the counterposition of two opposing terms—thesis and antithesis—from which a third, the synthesis is derived.



This process of thinking, generally called dialectical, which has dominated Western thought since Plato and Aristoteles, because of its form can conveniently be called "triangular" too.

This typically rationalistic process of thinking is also the basis of all the classical and romantic music in the Western tradition. From the counterposition of two opposing terms like consonance and dissonance, major and minor, tonic and dominant, chord and melody tension and conflict originate. And by a conflict two contrasting musical statements—two contrasting themes—lead to a synthesis which completes the unity of the work.

In the rationalistic dialectical method of thinking and in its correspondent music unity is the result of a development, of a conflict between two themes, of a dramatic action and not as in classical Indian music, a starting point.

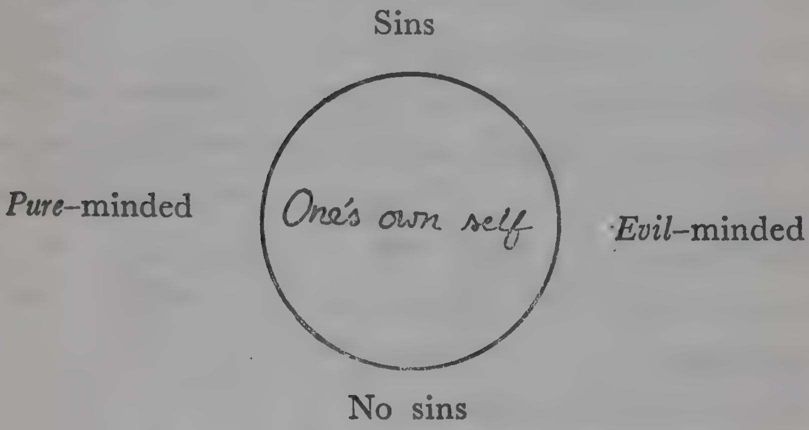
In Indian thought, unity is not synthesis, result, but, as I just stressed, exordium. All the contrasting terms are, a priori, the correspondents of two poles which complement one another, forming a whole. And just as summer and winter rotate round the year, the life and death round human existence, so do all the melodic and rhythmic formulae rotate round a central idea inherent in the Raga.

The conflict of contrasts, which leads to dramatic tension, is alien to Indian music. Its nature lies in a rotating, incessant process of change taking place round a central point—here it is interesting to note that in nearly all civilizations the circle is the symbol of the soul—an unending process of change without development, without aim.

This process of thinking, in contrast to the "triangular" one, we might call "circular."

In order to demonstrate this rotating, circular process of thinking, in a concentrated form, I should like to cite a quotation of Buddha :

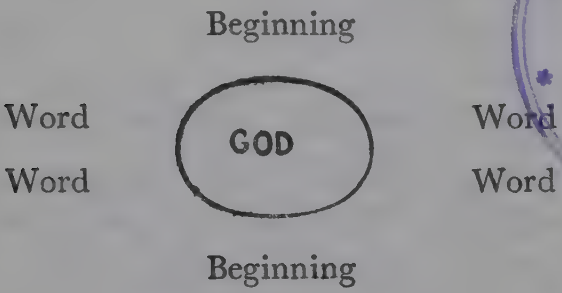
> "One's own self sins
> One's own self evil-minded
> One's own self flees from sin
> One's own self is pure-minded
> Oneself is evil or pure,
> No other can save one."



In the Bible too one may find such a kind of thought process. I recall the beginning of the Gospel of St. John :

"In the beginning was the Word, and the

Word was with God, and the Word was God. The same was in the beginning with God."



Also here one sees a rotating, polarizing pattern of terms: the silent beginning, silence, as pole to the spoken beginning, the word, and this as pole to the speaker, to God. And from God, the centre of the idea, in the opposite sequence, the return to the silent pole, to silence.

Western rationalistic, dialectical, triangular thought is directional thought, thought with an aim, striving towards a climax, thought which develops and "describes."

It is therefore not mere chance that a large part of Western music is of a descriptive character. I am here referring to the idea of programme music from its beginnings in the madrigal to the symphonic poems by Liszt, Berlioz, Richard Strauss and Claude Debussy.

Indian intuitive, circular thought, on the other hand, conceives as a whole, and is something which complements itself, which does not "describe", but "circumscribes."

Two fundamentally different attitudes of consciousness created two just as different music traditions. They should not, however, be seen as opposite, but as complementary factors.

It is steadily becoming more and more obvious that we must learn to understand the world as a whole, and culture as culture of mankind.

Eastern thinking and feeling, Western culture and civilization, if looked at individually, are only part of the whole. Only if we consider the inner interdependence of the two cultures in the sense of a reciprocal correspondence, will it be possible for us to understand each individual culture, and, in addition, mankind as a whole.

I believe that we are approaching an age in which the attitude of consciousness of both the East and the West will undergo decisive changes. It seems to me that the first symptoms can already be felt in all spheres of human activity, and primarily in the work of our most advanced scientists and artists.

The influence of the East in the West and the West in the East in all spheres of human existence, point to the development of a structure of consciousness whose characteristic seems to be an integrating attitude towards all cultural, scientific, and political manifestations. The German phycisist Heisenberg, in his book "Physics and Philosophy", stressed that "the great Japanese scientific contribution since the last war in the field of theoretical physics, could be taken as evidence of certain relationships between the traditional ideas of the Far East and the philosophical substance of the Quantum Theory." He writes : "It may be that it is easier to get accustomed to the terms of reality of the Quantum Theory if one has not passed through the naive materialistic system of Western thought which was still predominent in the first few decades of our century."

New and faster means of communicationt closer economic ties, and an increasing consciousness of mutual dependence have brough, the peoples of the world closer together. Nationalism, religious divergences, party spirit, and sectionalism are on the decline, and even in our consciousness the world will increasingly be accepted as a whole.

The great encounter between East and West is about to become reality.

Eastern and Western thought will be cornerstones of a new integrating culture, a culture which gives promise of the unity of mankind, and of a new humanism.

LECTURE III

MUSIC OF THE TECHNOLOGICAL ERA

We live in a world, which as a reality is made to a great—and day by day to a greater—extent by man. It is becoming more and more artificial, so to speak. It is not nature, not what has been *given* to man, but what has been *made* by man, namely the technological world, which forms the reality that actually surrounds us.

Technic, that is mechanisation, motorisation and automation of our everyday life, is the watchword of our age. In this world the way of life is determined and characterised by the rationalistic behaviour of man. The attitude of modern man towards the world and towards life is rational. To control the world with reason and to organise life with its aid is perhaps the tendency most characteristic of the 20th century. Rationalisation, leveling, standardisation and quantification are means by which this rational, or rather this rationalistic attitude influences and determines the way the world is reflected in human consciousness, as well as the pragmatic attitude towards this world. Mechanical devices, organisation, division of labour, centralisation are becoming thereby facts of life, vitally important factors which control the existence of modern man and forcibly bring it under their laws.

The sociologist Max Weber once summed up all this under the title "The disenchantment of human existence." And in his book "The present Spiritual Situation" the philosopher Karl Jaspers speaks of "the world divested of God."

It is inevitable then that all these factors, rationalism, rationalisation, leveling, standardisation and quantification, which are things created by man himself, react on him again and change in a decisive manner his intellectual life, his experience of the world and his existence. The latter all the more, as man—by reason of certain vitally significant experiences and consequent under-standing and perhaps by reason of definite anthropologic necessities —has not only created the technological world but is also compelled through continuous efforts to preserve it, to improve it and to control it.

Art represents one of the means which enables man to fulfill the law of maintenance, improvement and control of this technological world. Thus art does not exist isolated in a void but become a statement about the nature of man, a mirror of his situation and a testament of the epoch in which it is born.

Music was once a means of communicating with God, of establishing contact between man and what is above him. It was then an expression of what he perceived and what he felt. But now a mighty opponent seems to have grown against man—the machine. Man placed his confidence in it, in the 19th century. It became the central point of civilisation and culture. A technocratic era had begun.

At the World Exhibition in Paris in 1900 proclaimed the American historian and philosopher Henry Adams: "This is a new century. Electricity is its God." In February 1909 the Paris newspaper "Le Figaro" printed a futuristic manifesto by the Italian writer F. T. Marinetti in which it was said: "We claim that the splendour of the world has been enriched by a new beauty: the beauty of tempo. . . .Why look foolishly behind us at a moment when it is imperative to break through the mysterious doors of the impossible? We glorify the great masses, stirred by work, by pleasure or by revolt, the colourful and polyphonic surging of bustle in the modern capitals, the nocturnal vibration of the arsenals and building sites under their powerful electric moons, the railway stations—greedy devourers of smoking snakes, the iron foundaries with the winding coil of dense smoke suspended in the sky, the bridges hurled in an athletic spring across the diabolical iron forges of pensive rivers, the adventures mail steamers tracking the horizon, the locomotives. . . ."

From these ideas which fascinated mankind in the beginning of our century, at first arose music *about* the machine. Literature and painting began to adjust themselves to the theme of machines and during the years between the two World Wars an imposing number of compositions appeared which used the machine as their theme. "L'Aviatore Dro", an opera by Balilla Pratella, "The Machine", for chamber orchestra and piano, by Fritz Klein, the symphonic movement "Pacific 23" by Arthur Honegger, George Antheil's "Ballet Mechanique", Alexander Mossolow's opera "Iron works", Prokofiev's ballet "Pas d'Acier", the music drama "Hopkins, the machanic" by Max

Brand, "Impressoes de uma Usina de Aco" by the Brazilian composer Claudio Santoro, the ballet "PS" by the Mexican composer Carlos Chaves, Eugen Zadar's robotballet "Machineman" and two choreographic works: "Gas-Station" by the American composer Virgil Thomson and "Mechano" by the Argentine composer Jose Castro.

In a foreword to the score of "Pacific 23" Arthur Honegger confessed: "I have always felt a passionate love for locomotives. To me they are living beings, which I love just as another would love women or horses." Honegger extols the quiet heaving of the machines at rest, the straining at start, the gradual gaining of speed, till it reaches a lyrical height, the passion of a fast train of 300 tonnes thundering through the night at 120 km per hour.

With such an evolution it was inevitable that the instrumentarium of the classical-romantic orchestra was found to be inadequate. In 1925 Henry Cowell, an American composer, produced on the piano astonishing sounds and noises like those from the blows of a Bass iron tube and shrillhowling and groaning that reminded one of a distant circular saw, and thus created the so-called "prepared piano" which was finally taken over and completed by John Cage. The Italian Luigi Russolo divided dis futuristic orchestra in six groups of noises. He made distinction between cracking and roaring, wishtling and sizzling murmuring and rustling, shrieking, grating and banging, and between animal and human voices and created the so-called "Intona rumore", an arrangement of noices which he drafted in a manifesto. There amongst other things Russolo wrote: "Today music is becoming ever more complicated. It seeks a combination of notes which sounds very dissonant, strange and coarse to the ear. Thus we are approaching more and more the music of noises. We, futurists, had loved the music of all great masters very much. Beethoven and Wagner have moved our hearts for years. But now we have had enough of them. To us there is much greater pleasure from an ideal combination of noises from street cars, internal combustion engines, automobiles and busy crowds than listening again and again for example to the Eroica or the Pastoral. . . . We will entertain ourselves by mentally orchestrating the noiscs of the metal shutters of shop windows and banging doors, the shuffling and jostling of the crowds, the constant movement of people on the railway stations, in steel plants, factories, printing presses, power stations and the underground railway.

Thus the Swiss composer Rolf Liebermann, for example, hit upon the idea to let the sounds and noises which one hears in offices and shops, speak for themselves so to say: thus to combine the machines that are generally used there into a big orchestra "conducted" by a control gear. Rolf Liebermann wrote a rhythmic composition for this orchestra, which was recorded after months of collaboration between him and the designer of the control gear, the technician who translated the score into the language of the computer, the sound engineer and the acoustician. Thus came into existence a symphony for 156 machines—16 typewriters, 18 computers, 8 booking automata, 19 tape punchers, 10 recording counters, 8 gummed tape moisteners, 8 teleprinters, 2 metronomes, 4 warning bells, 2 doorbells, 10 hooters, 10 telephones, 40 locating installations, 1 duplicator and 1 transport machine.

* * *

In 1945 the so-called Paris School formed around the French composer and acoustician Pierre Schaeffer began to transform electroacoustically and to assemble natural, artificial and synthetic noises and sounds, always with the view to enlarge the range of sounds. There arose the so-called "musique concrete" which has been playing a greater and greater part in films, radio plays, theatre and television, ever since that time.

The two most important parts of the technical equipment by means of which the group around Pierre Schaeffer produce their "concrete music", are the "Fonogen" and the "Morphofon". Transposition of frequency, thus arbitrary changing of the sound material with reference to pitch and volume takes place by means of the Fonogen, a magnetophon with 12 different speed invented by Schaeffer. The morphofon is used for changes in the structure. It is a magnetophon with 10 reproduction heads along which the tape runs. Each magnetic head is cennected with a special amplifier, whose performance could be regulated by means of a simple filter. With the morphofon one can produce a synthetic echo, change the timbre in definite formant regions and even produce primitive modulation processes.

The rest of the work on the tape is done by means of a pair of scissors. It is a sound montage so to say. The composer cuts out portions in the desired form from the recording of the denaturalised sound-material and strikes it on to a blank tape.

Montage means connecting and placing side by side, individual parts which by themselves are independent and isolated. Art as montage knows no further organic, homogeneous creative work in the traditional sense. The artist of the technological era puts together what is at hand—the reality in its entire simultaneous multiplicity and confusing chaos. He deals with substances which are outside his conscious self and becomes thereby an observer. In other words : Art as montage is the formal reflection of the breaking in of the reality into consciousness, a new reality which bears the mark of the great political social and economic upheavals on the one hand and of the revolutionary knowledge of the natural sciences on the other. The breaking in of this reality—the total indistinctive reality turns the artist into a recorder of the world of objects art into a concrete art, in which the object becomes the main figure and is supposed to supercede the theme, as Fernand Leger emphasized.

Even the modern poet organises the disparate individual objects in the world and his own self and to place them side by side in a sort of aggluttinating technique. The semantic statement—where the meaning is intelligible—gives way to the purely phonetic one, as in the case of Gertrude Stein, Kurt Scuwitters, Tristan Tzara, Eugen Jolas. In 1934 Marinetti in his manifesto "Aero Music" demanded that the composers are not to set to music poems of "Passatism" i.e. the past, but only "syntheses of free words", that is alogical sound combinations.

The German poet Gottfried Benn referred to these new lyrics when he wrote: "....absolute poetry, poetry without faith, poetry without hope, poetry addressed to no one, poetry made out of words which the reader assembles, fascinated."

Here are some samples of this kind of poetry by the Scottish poet Ian Hamilton Finlay:

burn-fisher's scale

dock
tea
lap
slop
far
meh
rain
doe

Look, see

a
star
ah
afar
a
wee
wee
wan
wan

chinese cat

pmrkgniaou
pmrkgniao
pmrniao
pmiao
miao
mao

By the side of such concrete art and poetry stepped in concrete music which exhibits the "raw material" of the world of sounds. All eligible sounds and noises which could just be heard some how and some where are collected. From these sounds and notes which are recorded in a definite form on the tape, a selection is made, which is reassembled into a single work. This can be done by pilling up these sounds one over the other and finally letting them ring simultaneously or by letting them be played one after the other or against each other.

* * *

Towards the beginning of the century when Ferruccio Busoni in his much discussed book "An outline of a new aesthetics of music" wrote that the development of music fails due to the limitations of our musical instruments, the physicists de Ferest and v. Lieben invented the electronic valve, which was to become the starting point of that music, which characterises most faithfully till now the musical creations of the technological age, the so-called electronic music.

Vibrations are produced as electricity passes through a vacuum and the loudspeaker reproduces the same as sounds and noises. In this way every tone can be technically produced. The objective sound material thus gained is recorded on the tape so that a musical work is created which—just as the works of concrete music as well—needs no interpretation and like painting and sculpture, is created by the artist who creates it directly for the customer and in case of music, for the listener. With the electronic valve, a generator of sounds came into existence, which could replace the old orchestra, in future. And thus the steered vibrations of the electrons in the vacuum tube and in the gasfilled "lamp" without the inertia of limited matter became a mark of the new art of composition. In the year 1927, which as I have just shown, brought a heap of musical works *about* the machine, much had already been done to make music stream out *from* a machine. Theremin had already introduced his apparatus to the public. Joerg Mager had just introduced the constructions of electronic generators. A little later Maurice Martenot designed the "Ondes" or "Waves Martenot" and Friedrich Trautwein his "Trautonium."

The frightening freedom and the complexity of the new sound material and the need to impose limits on it, has thrown many composers of our times into a conflict of principles. In view of the apparently chaotic new realm of sounds, which admits misleading paths in all regions, they walk upon the narrow bridge of strict systems of form. The Cologn School with Herbert Eimert, Karlheinz Stockhausen, Gottfried Koenig and Maurice Kagel follows at first with time consuming laboratory work the structures of Anton Webern. His twelve tone splitsound is the model. Electronic designs are made according to it. This procedure produced musical micro-organisms of most interesting structure.

In the year 1956, the first compositions for human voices and electronic music were produced. The Italin composer Luciano Berio's "Homage to James Joyce", a work combining spoken words with electronically produced sound structures, is one of them. The sonic expedients are the vowel notes, consonantel noises and a range of intermediate form, so-called sound mixtures. The composer looks upon the spoken and sung sounds as separate organic specimens in the comprehensive, synthetic family of sounds. Intelligible words are occasionally formed from isolated spoken sounds Otherwise they remain pure sound values. Berio acknowledges the speech sounds as much more differentiated in their structure than all the notes composed so far. The electronically produced notes are to supply to the given sounds the necessary degree of sonic affinity lacking in them or reversely : the speech sounds are organi-

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cally inserted in a string of electronic sound colours.

Creative work in an electronic studio has become an important part of composing activity in almost all great centres of music in the Western world. Theatre, film, radio, television make use of electronic music. And even light music as well as dance music, forms which play a great role from a social point of view in the technological age, has been produced electronically by 1960. The sound of electronically produced music have gradually become familiar to the listener and the idea of a sound cosmos, which seemed chaotic at first and which shocked him once, has given way to a sense for the inherent order and the artistic content of this new music. The dominant spirit of man in an emotionally and intellectually determined work, which cannot automatically come into existence, in a purely mechanical manner, is recognised.

* * *

The possibility that our civilisation and culture will pursue more and more exclusively, the ideology of the technological world, that it will use in an increasing measure methods which capitalism, machine-technique, natural sciences, a bureaucratic administration, the totalitarian state, automation and the synthetic production of everything have brought in, is one of the great dangers of such a development. For, these forces of modern life would in their turn unite to bring about a system that is even more complete and more perfected and which is operated by a conscious but depersonalised intelligence—"the fourth man" as Alfred Weber said. This would necessarily be linked with a disregard for or the suppression of all human characteristics and institutions which had arisen in the previous stages of development of man. In such a world, every human impulse would be stifled by a mechanical process which is immune to all human aspirations which could disturb its idle run.

The practical use of the thinking machine gives rise to an entirely new technical science in our times, the so-called cybernetics. Electronic brains are taking over the conduct and the control of the process of industrial production and another industrial revolution which will place new and difficult tasks before us, is on its way.

A revolutionisation of traditional art with the help of cybernetics is already in progress. Its effects in the aesthetic as well as in the social field are yet to be seen. In future one will no more perceive the direct connection between the creating artist and the artistic inspiration as before. Very soon, ideas would be provided by the so-called intermediate agents, i.e. the machines. Notable results have already been achieved in this respect at the Technical University in Stuttgart. One proceeds in this case from the fact that all works of art have a so-called "expansion" and are dependent on a physical sphere on account of their "material." Works of art are therefore capable of being gauged by means of quantitative laws. One uses formulae of the natural sciences in order to determine the so-called information or entropy content of a work. Texts by Goethe, Rilke, Carossa, Thomas Mann and Jaspers, as well as compositions by Beethoven, Bach, Tchaikowsky, Richard Strauss and Hindemith have already been tested, compared and even evaluated by these methods. Synthetic manufacture of texts by means of computers or machine-made compositions are therefore, simply the reversion of this process.

It was with this phenomenon in view that

Karl Jaspers wrote: "By itself technique is neither good nor bad, but it could be put to good or bad use. It contains in itself no idea. It is a matter of what man does with it, what purpose of his it serves and under what limitations it is placed by him. The point in question is, what sort of man it is, that has power over it as what sort of creature man reveals himself to be finally, by means of it. Technique as an independent entity is different from what one could achieve with it, merely an empty force, a triumph that paralyses in the end.

In the case of a development towards the fourth man, man would himself become a machine, a bundle of conditional reflexes, fitted out in an educational factory in order to meet the requirements of other machines. However, all the former achievements of man, his instincts and his hopes, his fears and his ideals stand in the way of such a transformation. Fellow feeling and sympathy, the ability and inclination to share the life of another with fantasy and love, seem to have no place in the technological community. Along with it the fact that man is so disposed, that he would even seek satisfaction in negative activities, in destruction for instance, if creative activity is not possible, is an important consideration.

If we are conscious of this then we also notice that we are at a new turn of our destiny. Yesterday quickly turns into tomorrow. Man has little choice. For, his technological existence is at the same time the technological existence of art. He himself has devised the machine. Now he is facing the task of mastering it as well. The sovereignity of his spirit is challenged. Definite facts are gradually taking shape, which indicate, in what way man, the Homo Faber, the creator, would dominate technique in the field of art. Many events themselves of our time point to this development and already bear slightly the character of a future art.

It appears to me that only an integrating world culture would save us from such a development, which I have just pointed out. A world culture, which seeks to revive and enrich those human values which owe their origin to the process of differentiation It is a question of finding an alternative to the integration based on mechanistic uniformity. I am visualizing a culture which penetrates to the remotest spot on the earth through channels of communication, a culture which is omnipresent whether it is desired or detested. Going to the theatre, to a concert hall, to a cinema house would become unnecessary. Houses and apartments, the last familiar places of escape, would be unlocked. Man would be recovered and be left free in the world. He would feel himself to be a member of the Universe. He would be an individual and at the same time a part of a whole.

Similarly, the art of future would also be an integrating one, i.e. a universal art, as an ideal a complete weldless fusion of music, poetry, dance, mime, form and colour—a many sided world theatre without parallel. Music would not be artificially imposed on it from outside, but would be a natural and essential constituent of other elements. This modern technological work of art would again produce sensory impressions and cause psychic dispositions. Its musical manifestation would be moulded sound that is inherent to the whole, and not simply the bare note and clang.

Already there are examples of such an art. For years, stage, film, radio, television have been making use of the new electro-acoustic and electronic devices and employing technical music in structural and intellectually related works of non-musical art.

Also with regard to the content of this art a new world is being conveyed. In many works a spiritual, very often even a religious trend is perceived. I remind of Stockhausen's "Song of the youth" or Krenek's "Whitsunoratorio," both of them compositions for voices and electronic instruments.

The technological world has created its own media of expression. They entirely arise out of their material and mental world. It is now a question of mastering them and of bringing them under the control of the artistic spirit. "We have only just moved into the new house. But now we have to give a character to it, for it has none as yet", writes Antoine de Saint Exupery. Electronic music should no longer be mechanical music. It should give an expression to the common will of a multitude, the artistic and human intensity of which is infinitely greater than the individual will of an artistic personality.

With this development art and science would penetrate each other fruitfully. In a world culture the science will play an important role in every sphere of life even more perhaps than at present. The exact methods of observation and investigation and the subtle concept definitions of the scientist are no longer confined to the physical world. On the other hand the scientist will make use of impulses and inspirations which were till now officially excluded from the thinking process.

Side by side with the growth of a world culture another development will take place simultaneously, a development towards oneness and equilibrium. And, I am sure that in this reorientation, some elements of the human organism, which were for long suppressed or withdrawn from conscious control will again be brought to light, recognised, acknowledged, valued and conveyed anew and thus they will again determine our culture. I am sure that again, something that had arisen so naturally from the previous forms of art, will stir itself inside the domain of the machine, with the same interest for quality and for the effect of quality in human mind.

I think that in the present stage of development the highest degree of humaneness should be achieved and every one of us, whenever there is an occasion must be prepared to adopt the values of other cultures and to cultivate for the sake of oneness those aspects of his personality, which are essential for the whole. This is a fundamental principle of human growth, which was always held true but has now definitely become a command. If we are aware of that, then even the technological age would have a human culture and human art and the technological environment of our days will not become in future an inhuman world of automata.

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